

Hexazinone Label Discussion
PREC Subcommittee
June 7, 2011

Lisa Quagliaroli, Senior Environmental Scientist
Department of Pesticide Regulation

Registered Products:

1. Helena Velossa (5905- 579-AA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA, ID, MT, NV, OR, UT, WA), blueberry, Christmas trees, pineapple, sugarcane, forestry, yellow poplar, pasture / rangeland (Bermuda & Bahia grasses), non-crop areas.
2. Du Pont Velpar DF Herbicide (352- 581- AA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA, ID, MT, NV, OR, UT, WA), blueberry, Christmas trees, pineapple, sugarcane, forestry, pasture / rangeland (Bermuda & Bahia grasses), non-crop areas.
3. Du Pont Velpar L Herbicide (352- 392-ZA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA, ID, MT, NV, OR, UT, WA), blueberry, Christmas trees, pineapple, sugarcane, forestry, pasture / rangeland (Bermuda & Bahia grasses), non-crop areas.
4. DuPont Velpar Alfamax Gold Herbicide (hexazinone & diuron, 352- 666-AA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA, ID, MT, NV, OR, UT, WA).
5. DuPont Velpar Alfamax Herbicide (hexazinone & diuron, 352- 665-AA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA, ID, MT, NV, OR, UT, WA).
6. DuPont Velpar Alfamax MP Herbicide (hexazinone & diuron, 352- 634-AA)
 - a. Uses: **alfalfa, seed alfalfa** (in CA only).
7. DuPont Velpar ULW Herbicide (352- 450-AA)
 - a. Uses: forestry, non-crop areas.
8. DuPont Westar Herbicide (352- 626-AA)
 - a. Uses: forestry, Christmas trees (in ID, OR, WA), non-agricultural non-crop areas.

Label Statements:

Environmental Hazards

All registered hexazinone product labels include the following statement in the “Environmental Hazards” section:

“The active ingredient, hexazinone, in this product is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.”

There were no other ground water-related statements in this section in any of the reviewed labels. This statement is advisory and does not require users to take specific actions to protect ground water.

Directions for Use

All registered hexazinone product labels include the following statement in the “Directions for Use” section:

“The correct use rates by crop and geographical area, specified on the label, and proper mixing/loading site considerations and application procedures must be followed to minimize potential for hexazinone movement into ground water. Users are encouraged to consult with their state Department of Agriculture, Extension Service, or other pesticide lead agency for information regarding soil permeability, aquifer vulnerability, and best management practices for their area.”

There were no other ground water-related statements in this section in any of the reviewed labels. This statement is advisory and does not require users to take specific actions to protect ground water.

Use Rates – Alfalfa and Seed Alfalfa

Alfalfa and seed alfalfa application rates are based on the percent organic matter and soil type. The following table is taken from the DuPont Velpar L label (352- 392-ZA):

Soil Texture	Velpar L (pints/acre)		
	% Organic Matter in Soil Description		
	<1%	1-5%	> 5%
<u>Coarse</u> Loamy Sand, Sandy Loam	2-3	2-3	4-6
<u>Medium</u> Loam, Silt Loam, Clay Loam, Sandy Clay Loam	2-3	3-6	4-6
<u>Fine</u> Silty Clay Loam, Sandy Clay, Silty Clay, Clay	3-6	3-6	4-6

There are two pounds of hexazinone in one gallon of Velpar L. Growers may apply up to 1.5 pounds of hexazinone per acre.

Use Precautions - Alfalfa

The following statements appear in the “Use Precautions” section of all product labels registered for use on alfalfa and seed alfalfa:

“Do not use [product name] on gravelly or rocky soils, exposed subsoils, hard pan, sand, poorly drained soil or alkali soil.”

“Crop injury, including mortality, may result in fields with restricted root growth due to non-uniform soil profiles such as gravel bases and clay lenses.”

“Crop injury to alfalfa can be influenced by several factors including alfalfa variety, soil conditions, uniformity of application and environmental conditions, etc., if no prior use history for the site or variety treat only a small area when first using [product name]”

The Alfamax labels, which contain both hexazinone and diuron, also include the following statement in the “Use Precautions” section:

“Do not apply to alfalfa under stress from...shallow root penetration (such as shallow hard pan), alkali spots...as injury may occur.”

Seed Alfalfa – Additional Use Precautions

The following statements appear in the “Additional Use Precautions” section of all products registered for use on seed alfalfa:

“Do not use [product name] on fields with sandy loam or loamy sand having less than 1% organic matter.”

“Do not exceed [X unit] / acre on fields with sandy loam or loamy sand having 1-2% organic matter.”

The Alfamax labels, which contain both hexazinone and diuron, also include one or more of the following statements the “Additional Use Precautions” section:

“Injury or reduced seed production may occur when applications of [product name] are made to fields having a shallow hard pan layer.”

“Do not use [product name] on gravelly or rocky soils, exposed subsoils, hard pan, sand, poorly drained soil or alkali soil.”

“Crop injury, including mortality, may result in fields with restricted root growth due to non-uniform soil profiles such as gravel bases and clay lenses.”

PPI BOTTLE DIAGRAM: E-9A



DuPontTM Velpar[®] L

herbicide

Net 2.5 gal Nonrefillable Container



DuPontTM Velpar[®] L

herbicide

Water Dispersible Liquid

Contains 2 Lbs Active Ingredient Per Gallon

Active Ingredient	By Weight
Hexazinone [3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione]	25%
Other Ingredients	75%
EPA Reg. No. 352-392	EPA Est. 34704-MS-001
	TOTAL 100%

KEEP OUT OF REACH OF CHILDREN
DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

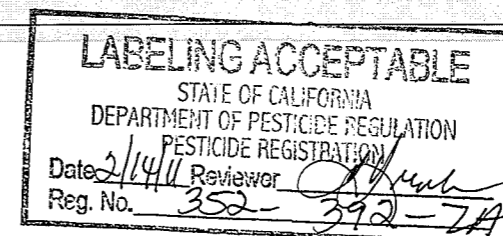
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

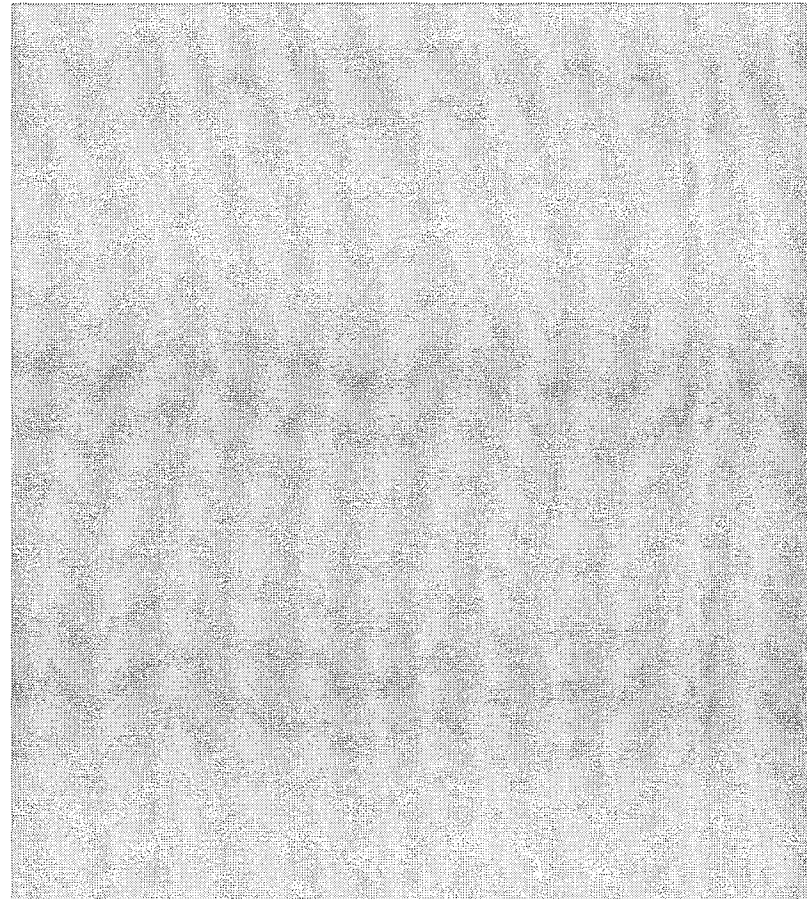
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for medical emergencies involving this product.

See back panel for additional precautionary statements.



STYLE: White F-style Left Offset

SEE ENCLOSED DIRECTIONS FOR USE



DUPONT **DuPont™ Velpar® L**
herbicide

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER! CAUSES EYE DAMAGE. Corrosive, causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.
Shoes plus socks.
Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product and as soon as possible wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

The active ingredient, hexazinone, in this product is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

PHYSICAL AND CHEMICAL HAZARDS

FLAMMABLE. Keep away from heat, sparks, and open flames. Keep container closed.

See Directions for Use in Supplemental Labeling attached.

Agricultural Use

Requirements

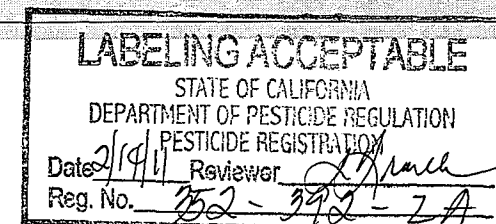
Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Notice to Buyer: Purchase of this material does not confer any rights under patents of countries outside of the United States.

Sold by: E. I. du Pont de Nemours and Company, 1007 Market Street, Wilmington, Delaware U.S.A.

A01431221

Made in U.S.A.



 **DuPont™ Velpar® L**
herbicide

Water Dispersible Liquid

Contains 2 Lbs Active Ingredient Per Gallon

Active Ingredient

By Weight

Hexazinone

[3-cyclohexyl-6-(dimethylamino)

-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione] 25%

Other Ingredients 75%

EPA Reg. No. 352-392

TOTAL 100%

KEEP OUT OF REACH OF CHILDREN
DANGER PELIGRO

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PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
AND DOMESTIC ANIMALS

DANGER! CAUSES EYE DAMAGE.

Corrosive, causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling.

(CONTINUED)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Shoes plus socks.

Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product and as soon as possible wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

The active ingredient, hexazinone, in this product is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

PHYSICAL AND CHEMICAL HAZARDS

FLAMMABLE. Keep away from heat, sparks, and open flames. Keep container closed.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

DuPont™ VELPAR® L must be used only in accordance with instructions on this label, or in supplemental DuPont publications.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

The correct use rates by crop and geographical area, specified on this label, and proper mixing/loading site considerations and application procedures must be followed to minimize potential for hexazinone movement into ground water. Users are encouraged to consult with their state Department of Agriculture, Extension Service, or other pesticide lead agency for information regarding soil permeability, aquifer vulnerability, and best management practices for their area.

PRODUCT INFORMATION

VELPAR® L herbicide is a water-dispersible liquid that is mixed in water and applied as a spray for weed control in certain crops, Christmas trees, forestry site preparation and release areas, and industrial areas. It may also be applied undiluted as a basal soil treatment for brush control in reforestation areas, rangeland, pastures and noncrop areas, or by stem injection for brush control.

VELPAR® L is an effective general herbicide providing both contact and residual control of many annual, biennial and perennial weeds and woody plants.

VELPAR® L is noncorrosive to equipment.

Care must be exercised when applying VELPAR® L near desirable trees or shrubs as they can absorb VELPAR® L through roots extending into treated areas.

This product may be applied on agricultural and non-agricultural sites that contain areas of temporary surface water caused by collection of water between planting beds, in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

VELPAR® L is absorbed through the roots and foliage. Moisture is required to activate VELPAR® L in the soil. Best results are obtained when the soil is moist at the time of application and 1/4–1/2 inches of rainfall occurs within 2 weeks after application.

For best results, apply VELPAR® L preemergence or postemergence when weeds are less than 2 inches in height or diameter. Foliar activity is most effective under conditions of high temperature (above 80 °F), high humidity, and good soil moisture. Foliar activity may be reduced when vegetation is dormant, semi-dormant, or under stress.

On herbaceous plants, symptoms usually appear within 2 weeks after application under warm, humid conditions, while 4–6 weeks may be required when weather is cool or dry, or when plants are under stress. If rainfall after application is inadequate to activate VELPAR® L in the soil, plants may recover from contact effects and continue to grow.

On woody plants, symptoms usually appear within 3–6 weeks after sufficient rainfall has carried the herbicide into the root zone during periods of active growth. Defoliation and refoliation may occur, but susceptible plants are killed.

The degree and duration of control may depend on the following:

- Use rate
- Weed spectrum and size at application
- Environmental conditions at and following treatment

Where a rate range is shown, use the higher levels of the dosage range on hard-to-control species, fine-textured soils, or soils containing greater than 5% organic matter or carbon. Use the lower levels of the dosage range on coarse-textured soils and/or on soils low in organic matter. Refer to specific uses for rate ranges.

APPLICATION INFORMATION

VELPAR® L may be applied by ground equipment and, where permitted, aerial equipment. Use rates, minimum spray gallonage, and other application information are described for the various uses.

Dispose of the equipment washwater by applying it to a use-site listed on this label or in accordance with directions given in the "Storage and Disposal" section of this label.

Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation and soil in a measured area to be treated.

TANK MIXTURES

VELPAR® L herbicide may be tank mixed with other herbicides and /or adjuvants registered for the uses (crops) specified in the label. Refer to the label of the tank mix partner(s) for any additional use instructions or restrictions. The most restrictive label provisions apply. If other label instructions conflict with this label do not tank mix the herbicide and/or adjuvant with VELPAR® L herbicide.

NOTE: When the air temperature is around 32°F, tank mixtures of paraquat dichloride plus VELPAR® L may form a hard sludge in the spray tank. This effect is most likely to occur when the tank mixture comes into contact with aluminum.

INVASIVE SPECIES MANAGEMENT

This product may be considered for use on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants. Effective EDRR systems address invasions by eradicating the invader where possible, and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is advised, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide instructions available in your area.

INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

AGRICULTURAL USES

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls.

Chemical resistant gloves made of any waterproof material.

Shoes plus socks.

Protective eyewear.

ALFALFA

DuPont™ VELPAR® L is labeled for control of certain weeds in established alfalfa grown for hay or seed production.

- Do not apply within 30 days of harvest (cutting for hay), or feeding of forage or grazing.
- Do not exceed 6 pints per acre per application.
- Do not exceed 6 pints (1.5 pounds active ingredient hexazinone) per acre per year.

APPLICATION INFORMATION

NON-DORMANT AND SEMI-DORMANT VARIETIES

In the following states, make a single application of VELPAR® L during the winter months when alfalfa plants are in the least active stage of growth.

Arizona	Montana	North Dakota	Texas
California	Nebraska	Oklahoma	Utah
Colorado	Nevada	Oregon	Washington
Idaho	New Mexico	South Dakota	Wyoming
Kansas			

In the following states, make a single application of VELPAR® L either in the spring before new growth exceeds 2 inches in height or to alfalfa stubble after cutting, following hay removal and before regrowth exceeds 2 inches in height.

Arkansas	Maine	New Hampshire	Rhode Island
Connecticut	Maryland	New Jersey	Tennessee
Delaware	Massachusetts	New York	Vermont
Illinois	Michigan	North Carolina	Virginia
Indiana	Minnesota	Ohio	West Virginia
Iowa	Missouri	Pennsylvania	Wisconsin
Kentucky			

NOTE: Severe alfalfa injury may result following application, if after cutting the regrowth is more than 2 inches high, or there is significant stubble left after cutting or grazing, or the air temperature is above 90 °F.

DORMANT VARIETIES

Make a single application of DuPont™ VELPAR® L after alfalfa becomes dormant and before new growth exceeds 2 inches in height in the spring. Where weeds have emerged, use a surfactant.

USE RATES

Use higher rates on hard-to-control species, (see **Weeds Controlled** section below) fine textured soils, soils containing greater than 5% organic matter, or under adverse environmental conditions such as temperature extremes or when weeds are stressed due to low rainfall. For dormant alfalfa, use a surfactant approved for crops at the rate of 0.25% v/v (1 quart per 100 gallons of spray solution). Select the appropriate rate for soil texture and organic matter content as follows:

Soil Texture Description	VELPAR® L (Pints/Acre) Percent Organic Matter in Soil		
	<1%	1-5%	>5%
Coarse Loamy sand, sandy loam	2-3	2-3	4-6
Medium Loam, silt loam, silt, clay loam, sandy clay loam	2-3	3-6	4-6
Fine Silty clay loam, sandy clay, silty clay, clay	3-6	3-6	4-6

NOTE:

- In the states of MT, ND, SD, and WY, do not exceed a use rate of 4 pints per acre on medium and fine textured soils.
- In the state of Montana (MT), do not apply to soils with less than 1.5% organic matter.
- In the state of Wyoming (WY): Do not apply to soils with less than 0.5% organic matter.
Apply to irrigated alfalfa only.

WEEDS CONTROLLED

VELPAR® L, when applied preemergence or early postemergence at the following rates, will control these weed species in alfalfa:

1 - 2 PINTS/ACRE

Tansymustard	<i>Descurainia pinnata</i>
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2 - 4 PINTS/ACRE

Bluegrass, annual	<i>Poa annua</i>	Mustard, Jim Hill (tumble)	<i>Sisymbrium altissimum</i>
Brome, downy (cheatgrass)	<i>Bromus tectorum</i>	Mustard, wild	<i>Brassica kaber</i>
Buckwheat, wild	<i>Polygonum convolvulus</i>	Orchardgrass (seedling)	<i>Dactylis glomerata</i>
Catchfly, English	<i>Silene gallica</i>	Pennycress, field	<i>Thlaspi arvense</i>
Chamomile, mayweed (dogfennel)	<i>Anthemis cotula</i>	Pigweed, redroot	<i>Amaranthus retroflexus</i>
Chickweed, common	<i>Stellaria media</i>	Radish, wild	<i>Raphanus raphanistrum</i>
Fiddleneck, tarweed	<i>Amsinckia lycopsoides</i>	Rocket, London	<i>Sisymbrium irio</i>
Flaree	<i>Erodium sp.</i>	Rocket, common yellow	<i>Barbarea vulgaris</i>
Flixweed	<i>Descurainia Sophia</i>	Salsify	<i>Tragopogon spp.</i>
Groundsel, common	<i>Senecio vulgaris</i>	Shepherdspurse	<i>Capsella bursa-pastoris</i>
Henbit*	<i>Lamium amplexicaule</i>	Speedwell, purslane	<i>Veronica peregrina</i>
Lettuce, Miner's	<i>Montia perfoliata</i>	Spurry, corn	<i>Spergula arvensis</i>
Mustard, blue	<i>Chorispora tenella</i>		

4 - 6 PINTS/ACRE

Alfalfa* (seedling)	<i>Medicago sativa</i>	Lettuce, prickly*	<i>Lactuca serriola</i>
Barley, foxtail (seedling)	<i>Hordeum jubatum</i>	Mallow, common	<i>Malva neglecta</i>
Bluegrass, perennial* (spring only)	<i>Poa spp</i>	Quackgrass*	<i>Elytrigia repens</i>
Cockle, white*	<i>Melandrium album</i>	Ryegrass, Italian (annual)	<i>Lolium multiflorum</i>
Dandelion, common*	<i>Taraxacum officinale</i>	Speedwell, ivyleaf	<i>Veronica hederifolia</i>
Dandelion, false* (spotted catsear)	<i>Hypochaeris radicata</i>	Tea, Mexican*	<i>Chenopodium ambrosioides</i>
Foxtail*	<i>Setaria spp</i>	Thistle, Canada (seedling)	<i>Cirsium arvense</i>
Kochia	<i>Kochia scoparia</i>	Thistle, Russian	<i>Salsola iberica</i>
Lambsquarters, common	<i>Chenopodium album</i>		

* Suppression - a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control. VELPAR® L, when applied to alfalfa in late spring or after cutting at the following rates, will control these species listed below:

2 - 6 PINTS/ACRE

Crabgrass	<i>Digitaria spp</i>	Jimsonweed	<i>Datura stramonium</i>
Fleabane	<i>Conyza spp</i>	Lambsquarters, common	<i>Chenopodium album</i>
Foxtail	<i>Setaria spp.</i>	Pigweed, redroot	<i>Amaranthus retroflexus</i>

SEED ALFALFA (CA, ID, MT, NV, OR, UT, WA)

VELPAR® L may be used for general broadleaf weed and grass control in established alfalfa grown for seed.

DORMANT VARIETIES

Make a single application of DuPont™ VELPAR® L after alfalfa becomes dormant and before new growth exceeds 2 inches in height in the spring. Where weeds have emerged, use a surfactant.

NON-DORMANT AND SEMI-DORMANT VARIETIES

Make a single application of VELPAR® L during the winter months when alfalfa plants are in the least active stage of growth.

WEEDS CONTROLLED

Refer to the Alfalfa - Weeds Controlled section for specific use rates and weeds controlled.

USE PRECAUTIONS AND RESTRICTIONS**SEED ALFALFA**

- Do not apply within 30 days of harvest (cutting for hay), or feeding of forage or grazing.
- Do not use VELPAR® L on fields with sandy loam or loamy sand soils having less than 1% organic matter.
- Do not exceed 2 pints per acre on fields with sandy loam or loamy sand soils having 1-2% organic matter.
- Do not exceed 2 pints per acre on seed alfalfa that has been established for only one growing season.

SEED ALFALFA

WALLA WALLA COUNTY, WASHINGTON

VELPAR® L Herbicide may be used for the suppression of prickly lettuce and quackgrass and control of Canada thistle (seedling), Kochia, and certain other weeds in established alfalfa grown for seed.

Use Rates: 4 to 6 pints per acre

Kochia	<i>Kochia scoparia</i>
Lettuce, prickly*	<i>Lactuca serriola</i>
Quackgrass*	<i>Elytrigia repens</i>
Thistle, Canada (seedling)	<i>Cirsium arvense</i>

* Suppression

USE PRECAUTIONS AND RESTRICTIONS SEED ALFALFA - WALLA WALLA COUNTY WASHINGTON

Do not exceed 6 pints VELPAR® L herbicide per acre per application.

Do not exceed 6 pints (1.5 pounds active ingredient hexazinone) per acre per year.

SPRAY EQUIPMENT

Apply VELPAR® L using a fixed boom power sprayer or aerial equipment.

For ground applications apply in a minimum of 20 gallons of spray solution per acre and by air in a minimum of 5 gallons per acre. Use at least 5 pints of water per each 1 pint of VELPAR® L.

CHEMIGATION

ALFALFA

Apply this product only through center pivot or linear-move sprinkler irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

Severe alfalfa injury may result following application after cutting if either the regrowth is more than 2" high or significant stubble is left after alfalfa cutting.

If you have questions about calibration, you may contact State Extension Service specialists, equipment manufacturers or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments when needed.

DORMANT APPLICATIONS

Select the appropriate rate, see **Use Rate** section, for soil texture and organic matter content using 0.25" to 0.75" of sprinkler irrigation as a continuous injection during the application. Best results are obtained when soil is moist at time of application, and when weeds have not germinated or are less than 2" tall or across.

APPLICATION AFTER CUTTING

Apply VELPAR® L at 1 pint per acre to stubble after cutting, following hay removal, and before regrowth exceeds 2" in height. Apply VELPAR® L using 0.25" to 0.75" of sprinkler irrigation as a continuous injection during the application. Best results are obtained when soil is moist at time of application and when weeds have not germinated or are less than 2" tall or across.

NOTE: Making an application when daily temperatures are forecast to be in the mid-to-high 90 degree temperature range within 3 to 5 days after treatment may increase the potential for crop injury.

SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

MIXING INSTRUCTIONS

1. Fill the supply tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of DuPont™ VELPAR® L and continue agitation.
3. Once the VELPAR® L is fully dispersed, maintain agitation and continue filling tank with water.
4. As the tank is filling, add tank mix partners (if desired). Follow use precautions and directions on the tank mix partner label.
5. After thorough mixing, the agitation system can be stopped to prevent excessive foaming in the tank. Once thoroughly mixed the solution in the supply tank does not require additional agitation unless specified on the companion products label. If foaming occurs in the injection supply tank, a defoaming agent (defoamer) may be added.
6. Apply VELPAR® L spray mixture within 48 hours of mixing to avoid product degradation.

USE PRECAUTIONS AND RESTRICTIONS

CHEMIGATION

- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- Distributing treated water in an uneven manner can result in crop injury, lack of effectiveness, or over-tolerance pesticide residues in the crop. Therefore, to ensure that the mixture is applied evenly at the labeled rate, use sufficient water, apply the mixture for the proper length of time and ensure sprinkler produces a uniform water pattern.
- Do not permit run-off during chemigation.

POSTING OF AREAS TO BE TREATED

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, daycare centers, hospitals, in-patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to all the following requirements.

- Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas.
- The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English.
- Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.
- All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words "KEEP OUT", followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word "STOP". Below the symbol shall be the words "PESTICIDE IN IRRIGATION WATER".
- Posting required for chemigation does not replace other posting and reentry requirements for farm worker safety.

REPLANTING (FOLLOWING ALFALFA)

- Do not replant treated areas to any crop except corn, root crops or sugarcane within two years after treatment, as crop injury may result.
- Corn may be planted 12 months after the last treatment in areas of moderate to high rainfall (greater than 20 inches), provided the use rate did not exceed 3 pints per acre.
- Root crops such as potatoes, sugarbeets, radish and carrots may be planted 12 months after last treatment, provided the use rate does not exceed 2 pints per acre. Sites with use rates higher than 2 pints per acre must not be replanted to any root crop within 2 years after application of VELPAR® L, or unacceptable crop injury may result.
In areas where irrigation is needed to produce the crop, the crop rotation intervals listed may need to be extended if the normal irrigation amount is reduced for any reason.
- Sugarcane may be planted any time following treatment.
- In California, do not replant seed alfalfa areas to any crop within two years after treatment, as crop injury may result.

CROP ROTATION

Field Bioassay

In arid climates (10 inches of rainfall or less per year) or areas where drought conditions have prevailed for one or more years, a field bioassay must be completed prior to planting any desired crop. The results of this bioassay may require the rotation intervals listed above to be extended. A successful bioassay means growing to maturity a test strip of the crop(s) intended for production. The test crop(s) strip must cross the entire field including knolls, low areas, and areas where any berms were located.
In areas where irrigation is needed to produce the crop, the crop rotation intervals listed may need to be extended if the normal irrigation amount is reduced for any reason.

ALFALFA - IMPREGNATION ON DRY BULK FERTILIZER (EXCEPT CALIFORNIA AND ARIZONA)

Dry bulk fertilizer may be impregnated or coated with VELPAR® L for application to established alfalfa. All instructions and precautions on this label must be followed along with state regulations relating to dry bulk fertilizer blending, impregnating and labeling.

If fertilizer materials are excessively dusty, use a suitable additive to reduce dust prior to impregnation, as dusty fertilizer will result in poor distribution during application. The dry fertilizer must be properly impregnated and uniformly applied to the alfalfa to avoid crop injury and/or poor weed control.

To impregnate the fertilizer, use a system consisting of a conveyor or closed drum used to blend dry bulk fertilizer. Any commonly used fertilizer can be impregnated with DuPont™ VELPAR® L, except potassium nitrate or sodium nitrate. Do not use VELPAR® L on limestone.

Use a minimum of 250 lb dry bulk fertilizer per acre and up to a maximum of 450 lb per acre. To impregnate or coat the dry bulk fertilizer with VELPAR® L, direct the nozzles to deliver a fine spray of this suspension toward the fertilizer for thorough coverage while avoiding spray contact with mixing equipment. Uniform impregnation of VELPAR® L to dry bulk fertilizer will vary, and if the absorptivity is not adequate, the use of an absorptive powder may be required to produce a dry, free-flowing mixture. "Microcel E" is the absorbent powder of choice. When another herbicide is used with VELPAR® L, mix and impregnate the fertilizer immediately.

Apply impregnated fertilizer as soon as possible after impregnation for optimum performance.

Select the rate of VELPAR® L to apply per acre from the appropriate section of this label. Then refer to the rate chart below to determine the amount of VELPAR® L that is to be impregnated on a ton of dry bulk fertilizer, based on the amount of fertilizer to be distributed in one acre.

Rate Chart for Impregnating Fertilizer with VELPAR® L

Fertilizer Rate/Acre	VELPAR® L Rate Per Acre			
	2 Pints	3 Pints	4 Pints	6 Pints
250 pounds	16 pts/ton	24 pts/ton	32 pts/ton	48 pts/ton
300 pounds	13.4 pts/ton	20 pts/ton	26.8 pts/ton	40.2 pts/ton
350 pounds	11.4 pts/ton	17.2 pts/ton	22.8 pts/ton	34.2 pts/ton
400 pounds	10 pts/ton	15 pts/ton	20 pts/ton	30 pts/ton
450 pounds	8.8 pts/ton	13.2 pts/ton	17.6 pts/ton	26.4 pts/ton

For rates other than those listed, use the following formula to calculate the amounts of VELPAR® L to be impregnated per ton of dry fertilizer.

$$\text{Pints VELPAR® L Per Acre} \times \text{1 Ton Fertilizer} = \text{Pints VELPAR® L per Ton of Fertilizer}$$

APPLICATION

Uniform application of VELPAR® L-impregnated dry fertilizer is essential for satisfactory weed control. Accurate calibration of the application equipment is essential for uniform distribution to the surface. The customary method of application is to apply 1/2 the labeled rate and overlap 50%. This results in the best distribution pattern.

USE PRECAUTIONS AND RESTRICTIONS - ALFALFA

- Best results are obtained when 1/2–1 inch of rainfall or sprinkler irrigation occurs within two weeks after application, when soil is moist at time of application, and when weeds have not germinated or are less than 2 inches in height or diameter. Heavy rainfall or excessive irrigation after application may result in crop injury or poor performance of the herbicide.
- On soils high in organic matter (greater than 5%), the effectiveness of VELPAR® L can be significantly reduced and weed control may be unsatisfactory.
- Avoid overlapping of spray swaths and shut off spray booms while starting, turning, slowing or stopping or crop injury may result.
- Crop injury, including mortality, may result in fields with restricted root growth due to nonuniform soil profiles such as gravel bases and clay lenses.
- Crop injury may result if hot weather, mid-to-high 90 degree range or higher, occurs within a few days after application.
- Do not apply to snow-covered or frozen ground.
- Crop injury to alfalfa can be influenced by several factors including alfalfa variety, soil conditions, uniformity of application and environmental conditions, etc., if no prior use history for the site or variety, treat only a small area when first using VELPAR® L.
- If abnormally dry conditions exist following application, restrict the first irrigation to no more than 1/2 acre inch of water.
- Temporary yellowing of alfalfa may occur following VELPAR® L applications.
- Treat only stands of alfalfa established for one year or for one growing season (except in California), provided:
 - The alfalfa stand has a well developed tap root structure that is at least 10 inches in length (0.25 inch diameter below the crown) throughout the field and the crop is healthy, vigorous, and not under stress from weather conditions, low fertility, insects or disease damage.
 - In areas with shorter growing seasons, such as, higher elevations, adequate alfalfa tap root growth may not occur and especially when alfalfa is grown together with a cover or nurse crop. If an adequate tap root is not present, delay application of VELPAR® L until the alfalfa has gone through a minimum of two growing seasons.
- In California, fall planted alfalfa may be treated in the following winter months with VELPAR® L at 1 to 2 pints per acre (use higher rate for fine textured soils) provided:
 - alfalfa root growth exceeds 6 inches in length
 - vegetative top growth of alfalfa has lateral development of secondary growth
 - alfalfa is healthy and vigorous, not growing under stress from insect, disease, winter injury or other types of stress.

Injury may result to alfalfa plants that fail to meet these growth criterion listed above.

- Do not use VELPAR® L on seedling alfalfa, alfalfa-grass mixtures, or other mixed stands as injury may result to the seedling alfalfa or companion crop.
- Do not add a surfactant to VELPAR® L when treating non-dormant alfalfa.
- Do not use VELPAR® L on gravelly or rocky soils, exposed subsoils, hardpan, sand, poorly drained soil, or alkali soils.

BLUEBERRY

HIGH BUSH BLUEBERRIES

DuPont™ VELPAR® L is labeled for control of certain herbaceous and woody weeds in established high bush blueberry fields.

APPLICATION INFORMATION

VELPAR® L may be applied to high bush blueberries that have been established for 3 or more years. Apply VELPAR® L in the spring before the lower leaves of the blueberry plant have fully expanded. Avoid contact of the leaves with the spray solution.

Using calibrated ground spray equipment, make the application in sufficient water to provide thorough and uniform coverage to the treated area (usually 20 gallons per acre). Shut off spray booms when starting, turning, slowing or stopping, or injury to the crop may result.

USE PRECAUTIONS AND RESTRICTIONS

HIGH BUSH BLUEBERRIES

- Do not apply through any type of irrigation system.
- Do not apply within 90 days of harvest.
- Do not apply to flooded field with standing water.
- Application to blueberry foliage will result in crop injury.
- Since the effect of VELPAR® L on blueberries varies with soil type, plant vigor, uniformity of applications and amount of rainfall, it is suggested that growers limit their first use to small areas.